Fact Sheets

SRS

TNX Outfall Delta Operable Unit

Background

The TNX Outfall Delta Operable Unit (TNXOD OU) is located in the southwestern portion of the Savannah River Site (SRS), between the Savannah River and the TNX industrial area (located approximately one-quarter mile east of the Savannah River). The TNXOD OU consists of the Outfall Delta, Lower Discharge Gully, Swamp High Ground, Inner Swamp, and Outer Swamp.

The Outfall Delta and Lower Discharge Gully were created when the Old TNX Seepage Basin (OTSB) was closed in 1981 and the standing free liquids were drained into the adjacent wetlands as part of the basin closure. Basin closure, along with basin overflow throughout its 24-year operating history, released water and accumulated sediments into the TNX Swamp, creating a "delta" of sediment. Stormwater continues to be discharged from the TNX Area via a concrete culvert located in the Lower Discharge Gully. The stormwater discharge continues to deposit "clean" sand and debris onto the surface of the Outfall Delta.

Environmental Concerns

The primary sources of contamination within the TNXOD OU include wastewater discharged to the unit from the OTSB and percolation of surface water, primarily stormwater, from the TNX Area through the OTSB. Among the contaminants discharged to the basin during the 24-year operating history are mercury, thorium, and natural and depleted uranium.

Environmental Actions and Plans

A Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation and Baseline Risk Assessment (RFI/RI/BRA) were conducted to assess the soil, sediment, and surface water associated with the TNXOD OU. The sampling program was designed to define the nature of hazardous substances at the unit and to delineate the lateral and vertical extent of contamination. The sampling occurred over several years.

In 1996, background surface and subsurface soil samples, in addition to surface water samples were taken. In 1998, geotechnical samples were collected to evaluate the physical properties of the natural soil and sediments at the TNX OD OU and to estimate seepage and percolation properties for contaminant transport modeling.

During 1999/2000, studies were undertaken to support the ecological risk assessment and contaminant migration assessment.

The findings from this extensive sampling concluded that the contaminant migration refined constituents of concern (RCOCs) include uranium-233/234, uranium-235, and uranium-238. The human health risk RCOCs for soil include mercury, actinium-228, cesium-137, lead-212, radium-228, thourium-228, thorium-234, uranium-233/234, uranium-235, and uranium-238. No ecological RCOCs were identified.

The RFI/RI/BRA was approved in November 2002. The Corrective Measures Study/Feasibility Study (CMS/FS) was submitted to the South Carolina Department of Health and Environmental Control and the U.S. Environmental Protection Agency in June 2003. Pending regulatory approval, SRS will begin developing the Statement of Basis/Proposed Plan (SB/PP).